. . . connecting your business

LANCOM OAP-54 Wireless

Dual-band outdoor access point for bridging large distances, campus coverage or for establishing hotspots

- Outdoor dualband access point for 2.4- and 5-GHz operation
- Two integrated 54/108 Mbps wireless modules for simultaneous operations with IEEE 802.11a/b/g/h
- IP66 housing with heating and cooling for -30° to +70°
- No-problems installation even away from power-supply points with Power over Ethernet
- Optional connection of external antennas
- Secure wireless LAN through IEEE 802.11i, IEEE 802.1x/EAP, LEPS, with AES encryption in hardware
- Secure Internet access via the integrated DSL router with stateful inspection firewall with intrusion detection/denial-of-service protection
- Separation of user groups by Multi-SSID and VLAN
- Optional: VPN site coupling, Hotspot support

LANCOM
Systems

The outdoor access point LANCOM OAP-54 Wireless has an IP66 housing which is resistant to strong water jets, features integrated heating and cooling, and can be sturdily mounted on walls or poles, all of which makes it ideally suited for locations where the demands on stability and robustness are highest. Be it in mountainous terrain or from roof to roof in the city—the LANCOM OAP-54 Wireless can support stable, high-performance, long-serving WLANs in any environment. It can be mounted easily, flexibly, and up to 60 m from the nearest power supply thanks to Power over Ethernet.

More flexibility.

With two integrated 108-Mbps wireless modules that comply with the WLAN standards IEEE 802.11a/b/g/h, the LANCOM OAP-54 Wireless can be operated in parallel in the 2.4-GHz and 5-GHz frequency bands. This makes this access point ideal as a relay to extend point-to-point wireless connections, or as a wireless-connection end point that provides WLAN coverage to public spaces. With one LAN and one WAN connector each and the integrated DSL router, LANCOM OAP-54 also serves as a central firewall and Internet gateway, and optionally as a VPN gateway for secured site coupling.

More Security.

LANCOM sets the standards in WLAN security. A comprehensive range of security technologies is supported in wireless LAN including IEEE 802.11i, 802.1x, WPA, WPA2, WEP64/128/152, access control lists or LEPS (LANCOM Enhanced Passphrase Security), which enables the configuration of an optimized solution, whatever the individual requirements. For example, Multi SSID allows the definition of up to 8 user groups, each with its own level of security. The integrated firewall with the latest security functions such as stateful inspection, intrusion prevention and denial-of-service protection will screen your network safely and reliably from external attack. LANCOM routers and access points support VRRP (Virtual Router Redundancy Protocol) to assure high availability in case of hardware failure. Outstandingly flexible backup solutions can be realized simply by adding in alternative devices, which can be from any vendor as the technology is non-proprietary.

More Management.

LANCOM developments are focused on performance, security and on management, too. LANCOMís WLAN management tools offer real benefits to network administrators for the installation, control and monitoring of up to 250 access points. Settings for wireless, encryption, or access control lists can be grouped into partial configurations, which are then executed for multiple access points in one easy move. A group configuration is assigned to a group folder and the changes are automatically sent to all of the devices. Adding in new devices? Simply add them to the group folder by drag and drop. Different settings? WLAN group configuration offers an automatic update. WLANmonitor visualizes the structures of the WLAN irrespective of physical location and facilitates the central surveillance of the entire wireless network.

More Certainty for the Future.

From the very start, LANCOM products are designed for a product life of several years. They are equipped with hardware dimensioned for the future. Even reaching back to older product generations, updates to the LANCOM Operating System—LCOS—are available several times a year, free of charge and offering major features. LANCOM offers unbeatable protection of your investment!

What's more

To complete the WLAN portfolio, LANCOM also offers suitable AirLancer client adapters and a large selection of high-end antennas for professional indoor and outdoor applications.

LANCOM OAP-54 Wireless

Firewall	
Stateful inspection firewall	Direction-dependant check based on connection information
Packet filter	Check based on the header information of an IP packet (IP or MAC source/destination addresses; source/destination ports, DiffServ attribute); remote-site dependant, direction dependant, bandwidth dependant
Masquerading	Network Address Translation (NAT), N:N mapping for the translation or masking of IP addresses
Port mapping	Provision of services from behind masqueraded computers, for example, to make an internal web server available from the outside (inverse masquerading)
Tagging	The firewall marks packets with routing tags, e.g. for policy-based routing
Actions	Forward, drop, reject, block sender address, close destination port, disconnect
Messaging	Via e-mail, SYSLOG or SNMP trap
Quality of Service	
Traffic shaping	Dynamic bandwidth management with IP traffic shaping
Bandwidth reservation	Dynamic reservation of minimum and maximum bandwidths, absolute or connection-related, separate settings for send and receive directions
DiffServ/TOS	Priority packet queuing based on DiffServ/TOS fields
Packet-size control	Automatic packet-size control by fragmentation or Path Maximum Transmission Unit (PMTU) adjustment.
Layer 2/Layer 3 tagging	Automatic or fixed translation of layer-2 priority information (802.11p-marked Ethernet frames) to layer-3 DiffServ attributes in routing mode. Translation from layer 3 to layer 2 with automatic recognition of 802.1p-support in the destination device.
Security	
Intrusion Prevention	Monitoring and blockage of login attempts and port scans
IP spoofing	Source IP address check on all interfaces: The only accepted IP addresses belong to the previously defined IP network
Access control lists	Filtering of IP or MAC addresses and preset protocols for configuration access and LANCAPI
Denial of Service protection	Protection from fragmentation errors and SYN flooding
General	Detailed settings for handling reassembly, PING, stealth mode and AUTH port
URL blocker	Filtering of unwanted URLs based on DNS hitlists and wildcard filters
Password protection	Password-protected configuration access can be set for each interface
Alerts	Alerts via e-mail, SNMP-Traps and SYSLOG
Authentication mechanisms	PAP, CHAP and MS-CHAP as PPP authentication mechanism
WLAN protocol filters	Limitation of the allowed transfer protocols, source and target addresses on the WLAN interface
IP redirect	Fixed redirection of any packet received over the WLAN interface to a dedicated target address
High availability / redundancy	
VRRP	VRRP (Virtual Router Redundancy Protocol) for non-proprietary backup in case of failure of a device or remote station. Enables passive standby groups or reciprocal backup between multiple active devices including load balancing and freely definable backup priorities
FirmSafe	For completely safe software upgrades thanks to two stored firmware versions, incl. test mode for firmware updates
VPN redundancy	Control of up to 16 redundant VPN gateways for high availability or load balancing
Line monitoring	Line monitoring with LCP echo monitoring, dead-peer detection and up to 4 addresses for end-to-end monitoring with ICMP polling.
VPN	
IPSec (optional)	IPSec data encryption (in combination with a LANCOM VPN Option only)
Hardware accelerator (optional)	Activated 3DES/AES hardware encryption with the VPN 25 option
IKE	IPSec key exchange with Preshared Key or certificate
Certificates	X.509 digital certificate support, compatible with Microsoft Server / Enterprise Server and OpenSSL, upload of PKCS#12 files via HTTPS interface
Algorithms	3DES (168 bit), AES (128, 192 or 256 bit), Blowfish (128 bit), RSA (128 or -448 bit) and CAST (128 bit); MD-5 or SHA-1 hashes
NAT-Traversal	NAT-Traversal (NAT-T) support for VPN over routes without VPN passthrough
IPCOMP	VPN data compression based on LZS or Deflate compression for higher IPSec throughput
Dynamic DNS (dynDNS)	Enables the registration of IP addresses with a dynDNS provider in the case that fixed IP addresses are not used for the VPN connection
Specific DNS forwarding	DNS forwarding according to DNS domain, e.g. internal names are translated by proprietary DSN servers in the VPN; external names are translated by Internet DNS servers.

LANCOM OAP-54 Wireless

WLAN	
Frequency band 2.4 GHz and 5 GHz (EU compliance)	2400 - 2483.5 MHz (ISM) and 5150-5750 or 5725-5825 MHz (UK only)
Transfer rates 2.4 GHz	54 Mbps to IEEE 802.11g (fallback to 48, 36 , 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection) compatible to IEEE 802.11b (11, 5,5, 2, 1 Mbps, Automatic Rate Selection), 802.11 b/g compatibility mode or pure g or pure b, Super A/G with Turbo Mode (108Mbps), bursting, compression
Transfer rates 5 GHz	54 Mbps to IEEE 802.11a/h (fallback to 48, 36 , 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection), Super A/G with Turbo Mode (108Mbps), bursting, compression, fully compatible with TPC (adjustable power output) and DFS (automatic channel selection, radar detection) according to ETSI regulations
Range *	Up to 150 m (up to 30 m in buildings) *
Maximum transmission power 2.4 GHz	802.11b: +19dBm @ 1 and 2Mbps, +19dBm @ 5.5 and 11Mbps
Maximum transmission power 2.4 GHz	802.11g: +19dBm @ 6Mbps, +14dBm @ 54Mbps
Maximum transmission power 5 GHz	802.11a/h: +18dBm @ 6Mbps, +12dBm @ 54Mbps with automatic transmission power control (TPC) and manual power settings
Minimum transmission power	Transmission-power reduction in software by 1dB steps to min. 0.5 dBm
Reception sensitivity 2.4 GHz	802.11b: -87dBm @ 11Mbps, -94dBm @ 1Mbps
Reception sensitivity 2.4 GHz	802.11g: -87dBm @ 6Mbps, -70dBm @ 54Mbps
Reception sensitivity 5 GHz	802.11a/h: -87dBm @ 6Mbps, -67dBm @ 54Mbps
Radio channels 2.4 GHz	Up to 13 channels, max. 3 non-overlapping (2.4-GHz band)
Radio channels 5 GHz	Up to 19 non-overlapping channels (5 Ghz band) with automatic dynamic channel selection (DFS)
Roaming	Seamless handover between radio cells, IAPP support, IEEE 802.11d support
WPA2 fast roaming	Pre-authentication and PMK caching for fast 802.1x authentication
Fast client roaming	With background scanning, mobile access points in client mode can switch to alternative access points which offer a better signal before the connection to the first access point fails
VLAN	Support of up to 4094 VLAN IDs for WLAN connections, 32 simultaneously usable VLAN tags for 802.11x clients
VLAN	Dynamic assignment of VLAN tags to 802.11x clients
Multi SSID	Simultaneous use of up to 8 independent WLAN networks per WLAN interface
Security	IEEE 802.11i / WPA2 with passphrase or 802.1x and hardware-accelerated AES, closed network, WEP64, WEP128, WEP152, access control lists, RADIUS client, user authentication, 802.1x /EAP
RADIUS server	Integrated RADIUS server for MAC address list management
Quality of Service	Prioritization according to Wireless Multimedia Extensions (WME, integral to IEEE802.11e)
Bandwidth limitation	Each WLAN client (MAC address) can be assigned maximum transmit and receive rates and an individual VLAN ID
Background scanning	The detection of rogue access points and the channel properties is carried out almost unnoticeably for all WLAN channels during normal AP operation.
Client detection	Rogue WLAN client detection based on probe requests
802.1x supplicant	Authentication of an access point in WLAN client mode at another access point via 802.1X (EAP-TLS, EAP-TTLS and PEAP)
Notice	* The effective distance and transmission rate that can be achieved are depending of the given building conditions.
WLAN operating modes	
WLAN access point	Infrastructure mode
WLAN bridge	Point-to-multipoint connection of up to 7 Ethernet LANs (mixed operation optional), broken link detection, blind mode, up to 32 VLANs simultaneously for WLAN connections
WLAN router	Use of the LAN connector for simultaneous DSL over LAN, IP router, NAT/Reverse NAT (IP masquerading) DHCP server, DHCP client, DHCP relay server, DNS server, PPPoE client (incl.Multi-PPPoE), PPTP client and server, NetBIOS proxy, DynDNS client, NTP, port mapping, policy-based routing based on routing tags, tagging based on firewall rules, dynamic routing with RIPv2, VRRP, spanning-tree protocol to support redundant routes in Ethernet networks
WLAN client	Transparent WLAN client node for wireless Ethernet extensions, e.g. connecting PCs or printers by Ethernet; up to 64 MAC addresses
Routing functions	
Router	IP and NetBIOS/IP multi-protocol router
HTTP	HTTP and HTTPS server for configuration by web interface
DNS	DNS client, DNS server, DNS relay, DNS proxy and dynamic DNS client
DHCP	DHCP client, DHCP relay and DHCP server with autodetection
NetBIOS	NetBIOS/IP proxy

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Routing functions	
NTP	NTP client and SNTP server, automatic adjustment for daylight-saving time
Policy-based routing	Policy-based routing based on routing tags. Based on firewall rules, certain data types are marked for specific routing, e.g. to particular remote sites or lines.
Dynamic routing	Dynamic routing with RIPv2. Learning and propagating routes; separate settings for LAN and WAN
LAN protocols	
IP	ARP, proxy ARP, BOOTP, LANCAPI, DHCP, DNS, HTTP, HTTPS, IP, ICMP, NTP/SNTP, NetBIOS, PPPoE (server), RADIUS, RIP-1, RIP-2, RTP, SIP, SNMP, TCP, TFTP, UDP, VRRP
WLAN protocols	
Ethernet	PPPoE, Multi-PPPoE, ML-PPP, PPTP (PAC or PNS) and plain Ethernet (with or without DHCP), RIP-1, RIP-2
Interfaces	
LAN	10/100Base-TX, autosensing, auto node hub, PoE with supplied PoE Injector only
LAN	10/100Base-TX, autosensing, auto node hub
External antenna connectors	Three reverse N connectors and three RP-N to N adapter cables for external LANCOM AirLancer Extender antennas or for antennas from other vendors. Please respect the restrictions which apply in your country when setting up an antenna system. For information about calculating the correct antenna setup, please refer to www.lancom-systems.com.
Management	
LANconfig	Configuration program for Microsoft Windows, incl. convenient Setup Wizards. Optional group configuration, simultaneous remote configuration and management of multiple devices over IP connection (HTTPS, HTTP, TFTP)
LANmonitor	Monitoring application for Microsoft Windows for (remote) surveillance and logging of the status of LANCOM devices and connections, incl. PING diagnosis
WLANmonitor	Monitoring application for Microsoft Windows for the visualization and monitoring of LANCOM WLAN installations, incl. Rogue AP and Rogue Client visualization
Webconfig	Integrated web server for the configuration of LANCOM devices via Internet browsers with HTTPS or HTTP
Access rights	Individual access and function rights for up to 16 administrators
User administration	RADIUS user administration for dial-in access (PPP/PPTP and ISDN CLIP)
Remote maintenance	Remote configuration with Telnet/SSL, SSH (with password or certificate), browser (HTTP/HTTPS), TFTP or SNMP, firmware upload via HTTP/HTTPS or TFTP
Security	Access rights (read/Write) over WAN, LAN or WLAN can be set up separately (VPN only, Telnet/SSL, SSH, SNMP, HTTPS/HTTP), access control list
Scripting	Scripting function for batch-programming of all command-line parameters and for transferring (partial) configurations, irrespective of software versions and device types, incl. test mode for parameter changes
SNMP	SNMP management via SNMP V2, private MIB exportable by WEBconfig, MIB II
Timed control	Scheduled control of parameters and actions with CRON service
TFTP	TFTP client and server with variable file names (name, MAC/IP address, serial number)
Diagnosis	Extensive LOG and TRACE options, PING and TRACEROUTE for checking connections, LANmonitor status display, internal logging buffer for SYSLOG and firewall events, monitor mode for Ethernet ports
Statistics	
Statistics	Extensive Ethernet, IP and DNS statistics; SYSLOG error counter
Accounting	Connection time, online time, transfer volumes per station. Snapshot function for regular read-out of values at the end of a billing period.
Export	Accounting information exportable via LANmonitor and SYSLOG
Hardware	
Power supply	Via Power over Ethernet**, 1 x PoE Injector supplied
Environment	-30 °to +70 °at 95 % max. humidity (non condensing)
Housing	235 mm x 210 mm x 80 mm (W x H x D), 3.4 kg, robust metal housing, IP66 protection rating, ready for wall and top-hat rail mounting, 6 LEDs for status display
Power consumption (max)	ca. 25 Watts
Footnote	**) Operates with the supplied PoE adapter only
Declarations of conformity	
CE	EN 55022, EN 301 489-1, EN 301 489-17, EN 60950

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Declarations of conformity	
2.4 GHz WLAN	ETS 300 328
5 GHz WLAN	EN 301 893
Notifications	Certifications notified in Germany, Belgium, Netherlands, Luxembourg, Austria, Switzerland, UK, Italy, Spain, France, Portugal, Czech Republic, Denmark
Package content	
Manual	Printed User Manual (DE, EN) and Quick Installation Guide (DE/EN/FR/ES/IT/PT/NL)
CD	CD with firmware, management software (LANconfig, LANmonitor) and documentation
Cable	Water-resistant, UV-resistant Ethernet PoE cable with water-resistant screw connector, 15m
Antennas	Two 3-dBi dipole dualband antennas
Power supply unit	Via Power over Ethernet**, 1 x PoE Injector supplied
Support	
Warranty	3 years, support via Hotline and Internet KnowledgeBase
Software updates	Regular free updates (LCOS operating system and management tools) via Internet
Options	
Options	LANCOM VPN-25 Option (25 channels, 50 configurable, incl. activated VPN hardware accelerator), item no. 60083
Options	LANCOM Service Option (24h advance replacement within Germany, 4 year warranty, not for PoE Power Injector), item no. 61401
Options	LANCOM Public Spot Option (authentication and accounting software for hotspots), item no. 60642
Accessories	
External antennas	AirLancer Extender O-30 2.4 GHz outdoor antenna, item no. 60478
External antennas	AirLancer Extender O-70 2.4 GHz outdoor antenna, item no. 60469
External antennas	AirLancer Extender O-9a 5 GHz outdoor antenna, item no. 61220
External antennas	AirLancer Extender O-18a 5 GHz outdoor antenna, item no. 61210
External antennas	AirLancer Extender O-D80g 2.4 GHz polarization diversity outdoor sector antenna, item no. 61221
External antennas	AirLancer Extender O-D60a 5 GHz polarization diversity outdoor sector antenna, item no. 61222
External antennas	AirLancer Extender O-360ag dualband omnidirectional outdoor antenna, item no. 61223
Antenna cable	AirLancer cable NJ-NP 3m antenna-cable extension, item no. 61230
Antenna cable	AirLancer cable NJ-NP 6m antenna-cable extension, item no. 61231
Antenna cable	AirLancer cable NJ-NP 9m antenna-cable extension, item no. 61232
Lightning Protection (antenna cable)	AirLancer Extender SA-5 lightning protection (2.4 and 5 GHz), item no. 61212
Lightning Protection (LAN cable)	AirLancer Extender SA-LAN lightning protection LAN cable, item no. 61213
Documentation	LANCOM LCOS Reference Manual (DE), item no. 61700
LAN cable (outdoor)	LANCOM OAP-54 Ethernet cable 15m, item no. 61508
Modem Backup	LANCOM Modem Adapter Kit, item no. 61500
VPN Client Software	LANCOM Advanced VPN Client for Windows 98SE-XP, single license, item no. 61600
VPN Client Software	LANCOM Advanced VPN Client for Windows 98SE-XP, 10 licenses, item no. 61601
VPN Client Software	LANCOM Advanced VPN Client for Windows 98SE-XP, 25 licenses, item no. 61602
Item numbers	
LANCOM OAP-54 Wireless	61507

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